Original research article

An analysis of delays among women accessing second-trimester abortion in the public sector in South Africa☆,☆☆,☆☆☆

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ABSTRACT

Objectives: To identify key delays and associated factors in women's pathway to second-trimester abortion that could inform strategies to increase earlier presentation.

Study design: We performed a secondary analysis using data collected from May 2012 to June 2013 as part of a randomized controlled trial among women having abortion at 13.0–20.0 weeks at a public hospital in South Africa. We used ultrasound and participant interview data to calculate 3 key intervals: (1) conception to suspicion of pregnancy, (2) suspicion to first healthcare visit for abortion, and (3) first healthcare visit to abortion procedure. We compared intervals for women at 13–15.0 weeks versus 15.1–20.0 weeks gestation at abortion using Wilcoxon rank-sum tests and tested for associations between gestational age at key events using multivariable linear regression.

Results: Median (interquartile range[IQR]) durations for the 3 intervals among women at 13–15 weeks (n=93) compared to 15.1–20 weeks (n=63) gestation were: (1) 36 days (IQR 21–53 days) versus 62 days (36–71 days), p<.001; (2) 29 days (IQR 15–46 days) versus 23 days (IQR 11–39 days), p=.64; (3) 14 days (IQR 7–21 days) versus 14 days (IQR 12–21 days), p=.32. Multivariable logistic regression showed marginal associations between gestational age at suspicion of pregnancy and no prior pregnancy (aOR=3.8, 95% CI 1.0–14.6) and living in informal housing (aOR=3.1, 95% CI 1.0–9.1). Gestational age on the day of the abortion procedure was significantly associated with living in informal housing (aOR=3.1, 95% CI 1.4–6.6).

Conclusion: The only differences in delay in obtaining second trimester abortion between South African women having an earlier and later second trimester procedure is due to longer time to suspect pregnancy.

Implications: Interventions to improve early pregnancy recognition should be explored and referral processes should be streamlined to avoid unnecessary delays accessing abortion care and possibly reduce the proportion of abortions performed later in the second trimester in South Africa.

1. Introduction

In South Africa, denial of abortion care to women based on their gestational age (GA) can lead them to opt for unsafe abortion practices from illegal providers [1]. While second-trimester abortion is safe when performed by trained providers, services are generally scarce, particularly where the "unmet need" for these services is pressing [2–4]. Even though a minority of abortions are performed in the second trimester, access to safe second-trimester abortion is deemed essential by the World Health Organization [5] as health risks associated with later abortion when performed outside of the formal healthcare system are disproportionately high [6].

Compared to those with earlier gestations, women seeking a second-trimester abortion tend to be younger and poorer [7,8]. Reasons for delay are largely similar across diverse settings and include lack of knowledge about the fertile period and risk of pregnancy; absence of pregnancy symptoms or failure to recognize pregnancy signs; [9–11] menstrual cycle changes; [9] complex decision making; [8,12] stigma and fear [12,13], as well as limited operational first-trimester services, inefficient referral practices and other health-system-related barriers such as hostility and judgment by facility staff [14].

Abortion is legally unrestricted up to 12 weeks GA and available on limited grounds including socio-economic hardship up to 20 weeks GA in South Africa. The proportion of abortions performed in the second trimester is higher than in many countries with similar legal frameworks [15]. In the public sector, the second-trimester abortion service is mostly in urban centers, where dilation and evacuation (D&E) is provided by private doctors contracted to government [2]. However, many public sector nurse providers express reluctance to provide care at later gestations [14] and expanding second-trimester services has not been successful country-wide [2,14–16].

Strategies to strengthen early care-seeking behavior could help address problems of overburdened and hard-to-access second-trimester abortion services. To help identify potential targets for such strategies, this study compared steps in the pathway to care among women obtaining abortion with pregnancies in the early and later second trimester.

2. Material and methods

2.1. Study design and setting

We used data collected as part of a single-blinded, randomized controlled trial among women undergoing second-trimester surgical abortion (between 13.0 and 20.0 weeks) at a public hospital near Cape Town, in the Western Cape Province, South Africa, between May 2012 and June 2013. The trial compared misoprostol to laminaria for efficacy of cervical priming prior to dilation and evacuation (D&E) among 156 women. Details of this study are described elsewhere [17]. Inclusion criteria included age 18 years or greater, able to speak English, Afrikaans, or Xhosa, able to give informed consent, residing within 1 h travel time to the hospital the night prior to the D&E, and able to be contacted by telephone. Exclusion criteria included active cervicitis, multiple gestation or fetal demise by ultrasound examination, history of bleeding disorder or current anticoagulation therapy, allergy to misoprostol, currently breastfeeding and unable to temporarily discard milk, or had more than one prior cesarean. The Stellenbosch University and the University of Cape Town Human Research Ethics Committees and the Allendale Investigational Review Board approved the study. The trial was registered at ClinicalTrials.gov, NCT01597726.

We reviewed women's clinical records for ultrasound-based GA and other relevant clinical information. In addition, we interviewed women on the day of their procedure, after successful completion of the abortion and recovery. Using a structured questionnaire, a trained fieldworker recorded sociodemographic details, reproductive and contraceptive histories and information on women's pathways to care, including when they first suspected pregnancy and when they first went to a healthcare facility seeking abortion care. The fieldworker asked how long ago each event occurred, and participants could respond in days, weeks or months. We converted all intervals to days with the definition of 1 month equaling 30 days and 1 week equaling 7 days. The interviewer also asked participants the date of their first positive pregnancy test.

From these data, we calculated the length of three intervals in women's abortion care-seeking trajectory: (1) days from conception to suspicion of pregnancy, (2) days from suspicion of pregnancy to first healthcare visit for abortion, and (3) days from first healthcare visit for abortion to the abortion procedure. We calculated the date of conception based on GA determined by ultrasound examination prior to the procedure and subtracted 14 days from the GA to calculate date of conception. If participants reported a positive pregnancy test date that preceded the date of first suspecting pregnancy, we used the test date as the time pregnancy was first suspected pregnancy date.

In addition, to explore personal delay in care-seeking following initial decision for abortion, we asked women, "After deciding to have this termination of pregnancy, did you get to the hospital/clinic immediately, or did you delay for some time." If women delayed, we asked them to explain why in an open response.

We entered data into CSPro (United States Census Bureau, Washington, DC, USA) and analyzed them using STATA 15 (College Station, TX, USA).

2.2. Analysis

We dichotomized the sample by GA at time of abortion procedure, with categories of 13–15.0 weeks and 15.1–20 weeks based on the clinical relevance that surgical abortion generally can be done with aspiration through 15 weeks; after 15 weeks, D&E is usually necessary, requiring a higher level of clinical skill. We compared GA groups for patient characteristics using Chi-squared or Fisher Exact tests for proportions and Wilcoxon rank-sum tests for medians. For each interval, we compared median durations between groups using Wilcoxon rank-sum tests. We used multivariable logistic regression to explore associations between being in the second (GA>12.0 weeks) versus the first trimester when pregnancy was first suspected and socio-economic factors showing a significant association with GA in bivariate analyses (p<.1); we decided a priori to include age, education, type of housing, and prior pregnancy regardless of p-value. We included the same factors in a second model exploring associations with being in the later versus earlier GA group at the time of procedure.

We coded the open responses from women reporting that they delayed presenting for abortion care subsequent to initial decision-making for abortion into the following categories: ambivalence about the abortion, limited access, abortion-related stigma, and other reasons. We also recorded attempts to self-manage the abortion.

3. Results

Table 1 shows demographic characteristics for the 156 women included in this study; 93 had a GA of 13–15 weeks at the time of the abortion and 63 had a GA of 15.1–20 weeks at the time of the abortion. Most demographic characteristics and reproductive histories were comparable between the two GA groups. The groups varied in socio-economic indicators with more in the earlier GA group living in formal housing with piped water compared to those in the later GA group.

Table 1
Demographic and reproductive health characteristics of study participants by gestational age category at time of abortion, (n=156).

	Overall (n=156)	13–15 weeks (n=93)	15.1–20 weeks (n=63)	p-Value
Age, years				.35
18–25	66 (42.3)	40 (43.0)	26 (41.3)	
26–35	77 (49.4)	43 (46.2)	34 (54.0)	
>35	13 (8.3)	10 (10.8)	3 (4.8)	
Highest level of education	11 (10–12)	12 (11–12)	11 (10–12)	.55*
<Grade 12	80 (51.2)	45 (48.4)	35 (55.6)	.38
≥Grade 12	76 (48.7)	48 (51.6)	28 (44.4)	
Housing				.01
Informal (Shack)	45 (28.9)	19 (20.4)	26 (41.3)	
Formal (House or Flat)	111 (71.2)	74 (79.6)	37 (58.7)	
Employment				.54
Unemployed	97 (62.2)	56 (60.2)	41 (65.1)	
Employed/Self employed	59 (37.8)	37 (39.8)	22 (34.9)	
Water				.03
Piped in home	107 (68.6)	70(75.3)	37 (58.7)	
Piped outside home	49 (31.4)	23 (24.7)	26 (41.3)	
Prior pregnancy	118 (75.6)	70 (75.3)	48 (76.2)	.90
Prior cesarean	13 (8.3)	9 (9.7)	4 (6.4)	.51
Prior abortion	23 (14.7)	16 (17.2)	7 (11.1)	.29
Prior use of contraception	148 (94.9)	87 (93.6)	61 (96.8)	.36
Prior use of injectable contraceptive	112 (71.8)	65 (69.9)	47 (74.6)	.52
Gestational age on day of procedure (days)	102 (95–110)	96 (92–104)	113 (108–120)	<.001*

All data are presented as n (%) or median (interquartile range).
* Wilcoxon rank-sum test.

Table 2
Intervals to obtaining abortion by gestational age category at time of procedure, (n=156).

	n	Median (IQR)	Range	p-Value*
Conception to suspicion of pregnancy #				
Overall study population	156	47 (26–61)	−14 to 92	
13–15 weeks at procedure	93	36 (21–53)	−14 to 76	<.001
15.1–20 weeks at procedure	63	62 (36–71)	2–92	
Suspicion of pregnancy to 1st consultation at health facility ##				
Overall study population	155	23(14–44)	−7 to 85	
13–15 weeks at procedure	92	29 (15–46)	−7 to 85	.64
15.1–20 weeks at procedure	63	23 (11–39)	0–83	
1st consultation at health facility to abortion procedure				
Overall study population	155	14 (9–21)	3–80	
13–15 weeks at procedure	92	14 (7–21)	4–80	.32
15.1–20 weeks at procedure	63	14 (12–21)	3–60	

IQR = interquartile range.
\# Suspicion of pregnancy prior to conception in 5 cases.
\## 1st consultation prior to suspicion of pregnancy in 2 cases.
* Wilcoxon rank-sum test.

Overall, the median (interquartile range [IQR]) time from conception to suspicion of pregnancy was 47 days (26–61 days); in 5/156 cases dates for suspicion resulted in intervals less than 0 days. The most common indicator of pregnancy was a missed period (n=133; 85.3%). While almost all women (n=154; 99.6%) reported having a positive pregnancy test prior to the procedure, many could not provide a test date (n=68; 43.6%) and 19/154 reported a test date prior to first suspicion of pregnancy. Of those who tested, only slightly more women (n=88/154; 56.4%) tested in a clinic rather than at home.

Table 2 shows the duration of the intervals leading up to the abortion procedure for the 2 groups. The only significant difference between GA groups was time from conception to suspicion of pregnancy, which was also the longest interval. We found no significant differences between groups for the other 2 intervals.

The median duration of the 3 intervals are presented in Fig. 1. For the GA 13–15.0 week group, 90 (96.8%) first suspected in the 1st trimester (≤12.0 weeks GA) versus 46 (73.0%) in the GA 15.1–20 weeks group (p<.001). In the GA 13–15.0 week group, 56 (60.2%) were in the 1st trimester at time of the first healthcare visit for abortion versus 9 (14.3%) for GA 15.1–20 weeks (p<.001).

Multivariable logistic regression analysis showed marginally significant associations with being in the second trimester (>12.0 weeks GA) at first suspicion of pregnancy (Table 3). Specifically, these were no prior pregnancy (aOR=3.8; p=.05) and living in informal (vs. formal) housing (aOR=3.1; p=.05). Living in informal (vs. formal) housing was the only factor significantly associated with being in the later versus the earlier second-trimester GA group at time of the abortion procedure (aOR=3.1; p=0.00).

Almost all (n=151; 97.4%) women sought healthcare at other facilities prior to going to the facility where the procedure was performed. Just over a quarter reported delaying presenting for their procedure after initially deciding for abortion (n=46; 29.5%). Among all women, reasons for delay included ambivalence about whether or not to proceed with the abortion (n=18; 11.5%), access-related problems (n=14; 9.0%), including not knowing where to go for the procedure, or stigma-related problems with family members or others (n=4; 2.6%), for example being scared of what to say to a mother or fear of what others would think. Other reasons included fear of the procedure or ill health (n=10; 6.4%). Demographic characteristics were not significantly associated with self-reported delays following initial decision for abortion.

Overall, few women (n=7; 4.7%) reported attempting to self-manage the abortion, and none of them offered this as a reason for delay. Two (2.3%) were in the earlier GA group and 5 (8.1%) in the later GA group. Of these 7 women, 2 used Stameta, a purging agent widely available in convenience stores, while others used tablets or various concoctions, including misoprostol (1 woman) and aloe juice or castor oil.
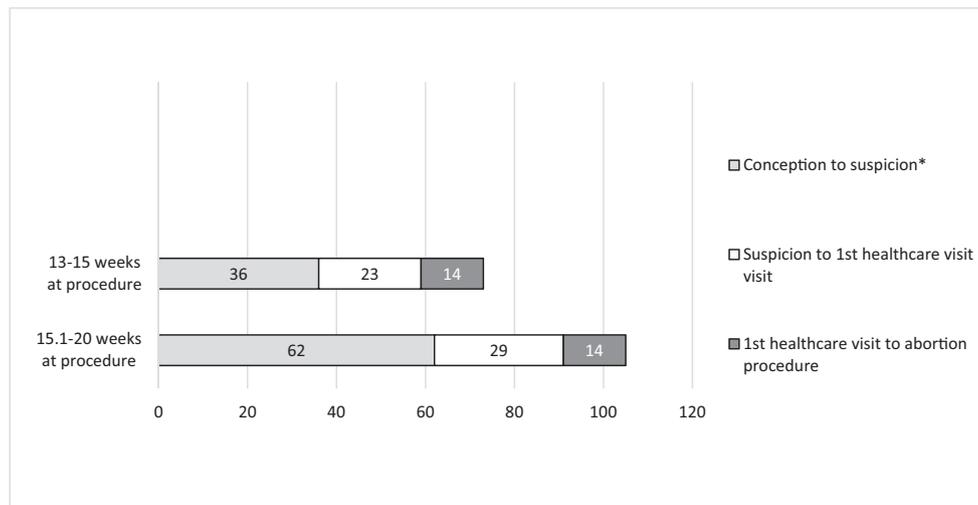

Fig. 1. Median duration of intervals (days) leading up to abortion procedure according to gestational age group (n=156). * denotes statistical significance (Wilcoxon sum-rank test, p<.001).

Table 3
Associations with gestational age at suspicion of pregnancy and abortion procedure (n=156).

GA>12.0 weeks at suspicion of pregnancy vs. GA≤12 weeks			
Covariate	aOR	95% CI	p-Value
Age			
Age 18–25 years (referent)	-	-	
Age 26–35	1.49	0.43–5.13	.53
Age>35 years	0.76	0.07–8.19	.82
Education completed			
< Grade 12 (referent)	-	-	
> = Grade 12	0.46	0.16–1.28	.14
Informal Housing	3.06	1.03–9.14	.05
No prior pregnancy	3.80	0.99–14.62	.05
GA 15.1–20 weeks at time of abortion procedure vs GA 13–15 weeks			
Covariate	**aOR**	**95% CI**	**p-Value**
Age			
Age 18–25 years (referent)	-	-	
Age 26–35	0.97	0.44–2.14	.94
Age>35 years	0.34	0.08–1.52	.16
Education completed			
< Grade 12 (referent)	-	-	
> = Grade 12	0.71	0.36–1.40	.33
Informal Housing	3.05	1.42–6.55	0.00
No Prior pregnancy	1.24	0.51–3.03	.63

We excluded piped water from the models due to collinearity with type of housing.

4. Discussion

Most women having second-trimester abortion confirmed the pregnancy while still in the first trimester, but many (58%) were in the second trimester when they first sought care at a facility. The longest interval for women in our cohort was from conception to suspicion of pregnancy, consistent with findings from a range of settings such as the US and Colombia, where abortion is legally restricted and access is variable [7,9,11,18]. Other research from South Africa has identified insufficient risk awareness, missed signs of an unintended pregnancy, and a long interval before confirmation of the pregnancy [12,19], indicating the need for renewed efforts to address these problems. An approach that centers on strengthening understanding of reproductive function and ensures easy access to free pregnancy tests could lead to multiple gains in women's self-empowerment.

Our multivariable analysis has similarities with studies comparing delays between women undergoing first- and second-trimester abortion which demonstrated associations between later presentation and socioeconomic status [7,11,18]. As abortion services are provided for free in the South African public sector, procedure cost was not a barrier in this study. However in our study, care-seeking involved personal travel costs and surmounting other barriers to access. Women living in areas with informal housing are likely to have experienced more challenges getting to their procedure visit, which involved a number of visits to different facilities in different locations. The marginally significant association in this study between no prior pregnancy and later suspicion of pregnancy is to be expected and points to the role of prior experience in informing action. In a similar way, frequent and regular pregnancy self-testing, given free and easy access to tests, might also serve as "prior experience", and lead to earlier pregnancy confirmation.

The journey from suspicion of pregnancy to seeking healthcare and then proceeding through the healthcare system to the abortion visit is known to involve complex decision-making by women. Harries and colleagues [12] described how women need to work through personal issues that can include uncertainty and ambivalence, financial considerations, altering relationship dynamics, and establishment of a supportive network. Emotional factors such as fear and stigma also act as barriers to care seeking. While earlier care-seeking is mostly beneficial, the decision-making process is very individualized and may require some time to complete. In the South African setting, while the first visit at a primary healthcare facility is the "gateway" to getting a referral for abortion care, women do not generally find healthcare staff helpful in the decision-making process [20].

In this study, the interval from first healthcare visit to the abortion procedure was 2 weeks long, suggesting insufficient progress in reducing structural barriers to care over the last two decades. Renewed efforts to improve access include a 2010 Western Cape Province guideline on efficient referral pathways [21], facility-based strategies to streamline access, and introduction of first-trimester medical abortion into the public sector. Broader-based access to first-trimester medical abortion services may help to reduce the demand for second-trimester procedures in the future, as has occurred in some other countries where medication is the dominant method of abortion provision [22].

Our study, which is a secondary analysis of trial data, has significant limitations; however, these findings help advance our understanding regarding delays among women having a second-trimester abortion in the South African public sector. Although we excluded women residing more than an hour of travel time away, no women were excluded from the trial for this reason, possibly because designated referral pathways to the facility are confined to the immediate densely populated region. Our data may suffer from selection bias since, in the parent trial, we excluded 81 women of 240 screened, of whom 21 were minors and 19 were not interested due to other commitments. In addition, we do not have information from women having abortion in the first trimester or from women experiencing delay such that they could not obtain abortion care due to being beyond the gestational limit in the South African abortion policy, which limits the generalizability of the findings.

Also, importantly, the study occurred at a single high-volume D&E facility where services are provided regularly and on a weekly basis. As such, structural delays are unlikely to be reflective of the rest of the country. Outside of the Western Cape Province, physicians rarely provide D&E in the public sector; D&E is available at some urban NGO reproductive health facilities and is expensive. Medical abortion involving inpatient stay in hospital for labor induction is standard care in the public sector; however, the shortage of hospital beds and use of outdated medication regimens result in long delays or failure to provide services.

Facilitating access to abortion as early as possible in pregnancy would have important public health benefits, reduce healthcare costs, and be consistent with many women's preferences. In South Africa, our research indicates that efforts are needed to reduce structural barriers that create delays once women have made the decision to have an abortion, as well strategies to help them recognize the pregnancy promptly. Research is needed on the utility of improving access to home pregnancy tests to improve pregnancy awareness.

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